Influence of Technology

by Sophia

	WHAT'S COVERED

In this lesson, you will learn about the influence of technology on design by focusing on:

1. History of Technology

We're going to travel through time a bit to see how technology has developed and influenced type.

Below is incised, or carved, wood. Later, ink was applied to it and paper was pressed on.

Similar to stamping, here is what the finished result might look like.

2. Calligraphy

While the image below is in a completely different language, you can see that it's handwritten type.

Here is another example of calligraphy, this time from a Latin Bible.

3. Johannes Gutenberg

In 1456, a German jeweler and printer named **Johannes Gutenberg** invented the printing press and printed the first book.

The old printing presses used **movable type**, as you can see below. This would require arranging blocks of letters.

The individual would then press the block onto the paper or books, hence the name "letterpress."

Below is an example of a book created through letterpress. Imagine how much time it would take to press each letter onto the paper.

Johannes Gutenberg

German jeweler and printer who invented the printing press and printed the first book in 1456.
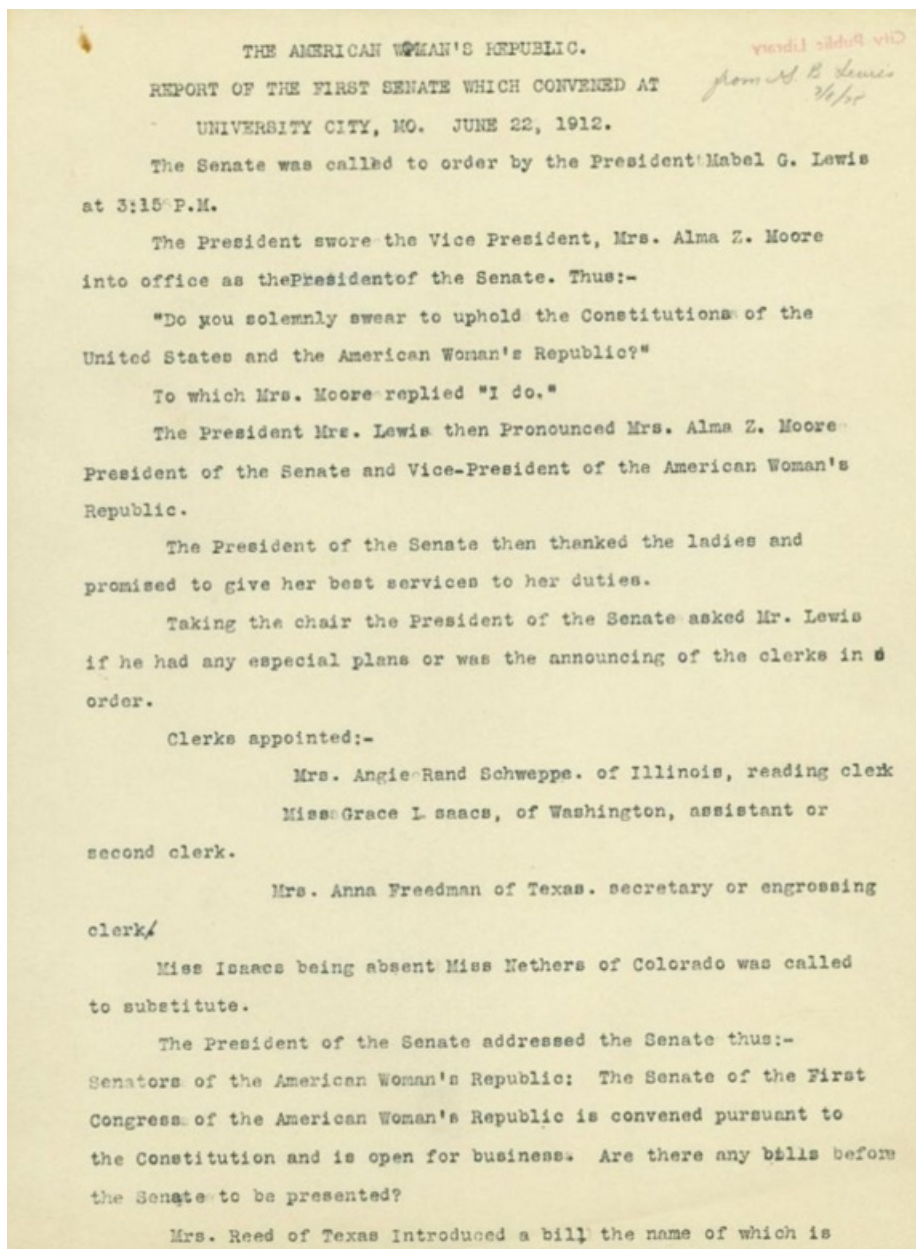
Movable Type

A component of Gutenberg's press; individual high relief characters each on their own metal block.

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4. Typewriters

As technology moved closer to the digital age, the typewriter came onto the scene. It might be a bit hard to see in the image, but each key has a letter assigned to it.

When the key is pressed, it swings a lever with the corresponding character and inks it onto the page, which looks like this.

THE AMERICAN WOMAN'S REPUBLIC.

REPORT OF THE FIRST SENATE WHICH CONVENED AT

UNIVERSITY CITY, MO. JUNE 22, 1912.

The Senate was called to order by the President Mabel G. Lewis
at 3:15 P.M.

The President swore the Vice President, Mrs. Alma Z. Moore
into office as the President of the Senate. Thus:-

"Do you solemnly swear to uphold the Constitutions of the
United States and the American Woman's Republic?"

To which Mrs. Moore replied "I do."

The President Mrs. Lewis then Pronounced Mrs. Alma Z. Moore
President of the Senate and Vice-President of the American Woman's
Republic.

The President of the Senate then thanked the ladies and
promised to give her best services to her duties.

Taking the chair the President of the Senate asked Mr. Lewis
if he had any especial plans or was the announcing of the clerks in
order.

Clerks appointed:-

Mrs. Angie Rand Schweppe. of Illinois, reading clerk

Miss Grace L saacs, of Washington, assistant or
second clerk.

Mrs. Anna Freedman of Texas. secretary or engrossing
clerk.

Miss Isaacs being absent Miss Nethers of Colorado was called
to substitute.

The President of the Senate addressed the Senate thus:-
Senators of the American Woman's Republic: The Senate of the First
Congress of the American Woman's Republic is convened pursuant to
the Constitution and is open for business. Are there any bills before
the Senate to be presented?

Mrs. Reed of Texas Introduced a bill the name of which is

Typewriters have a **monospaced type**, which is a non-proportional typeface, so each character takes up the same amount of space. This is different from **proportional-type spacing**, in which letterspacing compensates for the shape of each character.

If you compare a typewritten page to a digital one, you'll notice the difference in linespacing. Again, this is because each character on a typewriter takes up the same amount of space, regardless of the shape of that character.

📄 TERMS TO KNOW

Monospaced Type

A non-proportional typeface; each character takes up the same amount of space.

Proportional Type Spacing

Letter spacing that compensates for the shape of each character.

5. Computers

Taking a look at the old computer below, you can see how far technology has come.
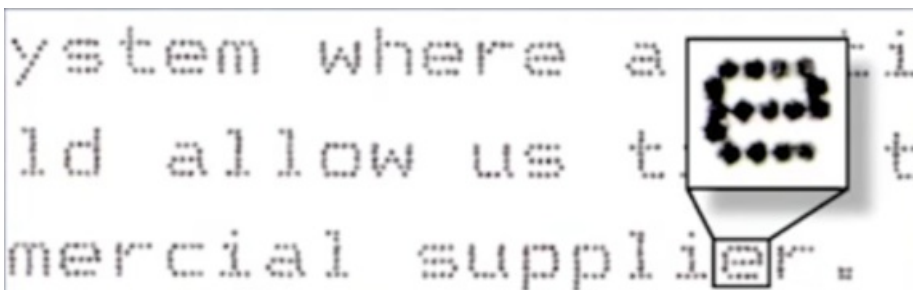

The image above is the CRTronic 360. This is called a photo-type setting, which means it projects light through a film negative of an image of an individual character, and all the photographic paper collects in a spool.

The device is light-tight, so light does not enter into it. The paper is processed in a machine with chemicals, similar to the old process of developing photographs.

Printers, specifically dot matrix printers, were also introduced, but not quite to the quality or resolution that we are now accustomed to.

You can see why it was called a dot matrix printer by looking at the result here.

Laser printers were invented by Xerox in the late 1960s and are still in use today. They brought fast, high-quality printing to the professional and consumer markets. No other printer available at the time could offer such a combination of features, so they were expensive even then.

Next came inkjet printers, which most of us are familiar with. These printers use the CMYK subtractive color process, mixing inks to produce text and images.

6. Typefaces

Type has gone through many changes, not only in the different methods of production, but in the type itself as well.

Modern typefaces now come as digital font files and arrive pre-loaded on computers, phones, and other devices. The three most popular font formats are:

- OpenType
- TrueType
- PostScript Type 1

OpenType, developed by Adobe Systems, is the most recent font file format. It works on both Windows and Macintosh computer systems, and uses the file extension OTF.
TrueType is a font file format developed by Microsoft, and it comes in both Windows and Macintosh versions. It uses the file extension TTF.

PostScript Type 1 is another file format developed by Adobe, and it consists of two files. Some are pre-loaded on computers, and others can be downloaded from various font sites. It uses the file extension PS.

Many times, when choosing fonts, you will see that in addition to the font names and samples of what they look like, you are also told if a font is TrueType or OpenType. This is indicated by the blue TT icon, or a black and teal O icon to the left of each one.

Icons will give you a visual sample of what the font might look like, but it's good to know that the publisher of the font has control over the look of the icon.

> 📄 TERMS TO KNOW
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> **TrueType**
> A font file format developed by Microsoft; TrueType comes in both Windows and Macintosh versions. File extension: .ttf.
>
> **OpenType**
> The most recent font file format; OpenType was developed by Adobe Systems and can be used on both Windows and Macintosh computer systems. File extension: .otf.
>
> **PostScript Type 1**
> A font file format developed by Adobe; PostScript fonts consist of two files. File extension: .ps.

> 📋 SUMMARY
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> This tutorial explored the **history of technology** in regards to type. You learned about **calligraphy** across languages, and **Johannes Gutenberg**, the inventor of the printing press. You also learned that **typewriters** were more efficient than the letterpress, but they featured **monospaced type**. **Computers** and printers brought further efficiencies, but the early models resembled the old photography processes with chemicals and a light-tight container. Finally, **typefaces** have evolved with the creation of **OpenType**, **TrueType**, and **PostScript Type**.
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> Good luck!

Source: This work is adapted from Sophia author Mario Hernandez. image of typewritten page, public domain
https://en.wikipedia.org/wiki/Onionskin#/media/File:Onionskin_paper.jpg

<div style="background:#3a3a3a;color:white;padding:8px">📄 TERMS TO KNOW</div>

Johannes Gutenburg
  German jeweler and printer who invented the printing press and printed the first book in 1456.

Monospaced Type
  A non-proportional typeface; each character takes up the same amount of space.

Movable Type
  A component of Gutenberg's press; individual high relief characters each on their own metal block.

OpenType
  The most recent font file format; OpenType was developed by Adobe Systems and can be used on both Windows and Macintosh computer systems. File extension: .otf.

PostScript Type 1
  A font file format developed by Adobe; PostScript fonts consist of two files. File extension: .ps.

Proportional Type Spacing
  Letter spacing that compensates for the shape of each character.

TrueType
  A font file format developed by Microsoft; TrueType comes in both Windows and Macintosh versions. File extension: .ttf.